REMARKS

Applicant thanks the Examiner for the interview granted March 14. During the interview, it was agreed that a Request for Continued Examination would be filed together with this Amendment with new claims.

The Examiner had rejected the previous claims under 35 §103 with Cosman in view of Nissen, or for some of the claims (previous claims 9-15) in view of a further reference Sekiguchi.

Claim 48 distinguishes over the primary reference Cosman at least by reciting an input system selecting a point by a user in a 3D volumetric visualization of a three-dimensional data set and by further reciting a volumetric 3D monitor which shows the 3D volumetric visualization surrounded by an associated surface or surfaces on which a reference point is definable with respect to said 3D visualization shown by the monitor. The claim further defines a selection unit which selects said reference point on the surface or surfaces relative to the 3D volumetric visualization on the volumetric 3D monitor and a direction unit specifying a direction from the reference point to the point being selected by the user in the 3D volumetric visualization on the volumetric 3D monitor.

Dependent claim 49 recites that the surface or surfaces is or are virtual.

A preferred embodiment description of the above-described claim language can be found in Applicant's specification at page 3, the paragraph at the top describing the volumetric 3D image monitor and the surface on which the reference point is determined which surrounds the 3D volumetric image – see also page 7, line 7 discussing the virtual surface. Further note page 7, line 11 indicating that the surface (a virtual surface according to dependent claim 49) surrounds the monitor in such a volumetric monitor.

As discussed during the interview, Cosman shows in Figure 1 a patient's head H with a first camera 4 in front and a side camera 5. Video signals from the two cameras are fed to the digitizer unit CD and a graphics data processor DP. The graphics data processor DP creates scanned 3D image data from the two video signals and stores them in the memory M. The image generator IG permits a two-dimensional display on a two-dimensional display unit D. The patient's head has a skull hole 7 through which an instrument is inserted. Figure 12A was also discussed. Figure 12A shows a perimeter fencing around the patient's head.

As described at column 5, line 19, Cosman describes the use of stereoscopic imaging techniques by the processor DP to map points acquired by the camera system OS in world coordinates – as treated in the article "Stereo Imaging".

From the above, it is clear, however, that there is no 3D volumetric visualization displayed by a volumetric 3D monitor anywhere in Cosman, but only a 3D data set stored in the memory. As pointed out by Applicant's specification, the use of a three-dimensional volumetric visualization with a volumetric 3D monitor provides substantial advantages over the use of a 2D flat plane monitor. By the inventive selection unit, a point is defined in the 3D volumetric visualization image on a volumetric 3D monitor. Cosman only has a two-dimensional display.

Furthermore, the recitation in claim 48 of the definition of the reference point on the surface or surfaces surrounding the 3D volumetric image is nowhere suggested in Cosman. In Figure 12B of Cosman although points such as 922 are shown as reference points, there is no 3D volumetric visualization by a volumetric 3D monitor inside of the cubicle box shown in Fig. 12A. Only the outline of a dataset is shown.

The Examiner also indicated in the previous Office Action that Cosman did not teach the distance from a reference point to the point being located. However, as explained in greater detail in the Amendment After Final of February 6, the secondary reference of Nissen is only for resizing of an object on a computer screen and wherein Nissen only discloses requiring one to first select a point by touching the screen area to be able to define a vector where the point must be first selected. In other words, claim 48 of the present invention uses a reference point and a vector to find a point to be selected whereas Nissen uses two points to define a vector. Even more importantly, Nissen has nothing to do with finding a point inside of a 3D volumetric image on a volumetric 3D monitor and thus one skilled in the art would find no reason to combine Nissen with Cosman.

Dependent claims 49-63 distinguish at least for the reasons noted with respect to claim 48 and also by reciting additional features not suggested.

Allowance of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Respectfully submitted,

(Reg.No.27,841)

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